DEFENSE INFORMATION SYSTEMS AGENCY
JOINT INTEROPERABILITY TEST COMMAND
FORT HUACHUCA, ARIZONA 85613-7020

IN REPLY
REFER TO: Networks, Transmission and
Intelligence Division (JTE)

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Joint Interoperability Test Certification of the SecureLogix Enterprise Telephony Management (ETM), TeleWall Telecommunications Firewall Application, Software Release 3.0.1 Lincoln 47

References: (a) DOD Directive 4630.5, "Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence (C3I) Systems," 12 Nov 1992

(b) CJCSI 6212.01B, "Interoperability and Supportability of National Security Systems, and Information Technology Systems," 8 May 2000

1. References (a) and (b) establish the Defense Information Systems Agency (DISA), Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification. Additional references are provided in enclosure 1.

2. The SecureLogix Enterprise Telephony Management (ETM) TeleWall Telecommunications Firewall Application, Software Release 3.0.1 Lincoln 47, meets the interoperability requirements for the Defense Switched Network (DSN) and is certified for joint use. Testing of the ETM TeleWall Application was in accordance with the references provided in enclosure 1. This certification expires upon changes that affect interoperability, but no later than three years from the date of this memorandum.

3. These findings are based on interoperability testing conducted by the JITC, 15-23 October 2001. Testing was conducted at the JITC Network Engineering and Integration Lab (NEIL), Fort Huachuca, Arizona. The Certification Testing

JITC, Memo, Networks, Transmission and Intelligence Division (JTE), Joint Interoperability Test Certification of the SecureLogix Enterprise Telephony Management (ETM), TeleWall Telecommunications Firewall Application, Software Release 3.0.1 Lincoln 47

Summary (enclosure 2) documents the test results and describes the test network. Users should verify interoperability before deploying the ETM TeleWall Application in an environment that varies significantly from that described.

4. The ETM TeleWall Application takes the firewall concept for data communications and applies it to telecommunications networks. Like the data network version of a firewall, the ETM TeleWall Application provides a rule-based policy enforcement mechanism for telecommunication networks. The ETM TeleWall Application is designed to automatically monitor and enforce telecommunications policies in order to deter and detect access control violations. It can automatically detect, log, alert, and block phone line traffic that violates a user-defined rule. The ETM TeleWall Application certification testing verified its interoperability and potential impact with the DSN. This certification effort did not assess the firewall functionality of the ETM TeleWall Application. Users of the Application should ensure it meets their functional requirements for a telecommunications firewall prior to fielding.

5. The ETM TeleWall Application, Software Release 3.0.1 Lincoln 47, was tested using the following SecureLogix platforms:

ETM 2100
ETM 3200
ETM 1010

Though not specifically tested, other SecureLogix platforms running the ETM TeleWall Application, Software Release 3.0.1 Lincoln 47, should impose no interoperability problems with the DSN. The certification of the ETM TeleWall Application is based upon evaluation of the platforms using the Exchange Requirements (ERs) derived from DSN voice and data services requirements. The ERs used to evaluate the interoperability of the Application are listed in Table 1. The interoperability status of the ETM TeleWall Application, Software Release 3.0.1 Lincoln 47, is indicated in Table 2.

Table 1. SecureLogix ETM TeleWall Application Exchange Requirements

Platform	Interface	Exchange Requirement
ETM 2100/3200	**T1 CAS & ISDN PRI T1**	- Alarms - MLPP Preempt Signals - POTS Voice Calls - Asynchronous Modem - STU-III/STE Secure Voice - STU-III/STE Secure Data - Synchronous Data - T1 Electrical Characteristics - Video Teleconferencing
ETM 1010	**2 Wire Analog**	- POTS Voice Calls - Asynchronous Modem - STU-III Secure Voice - STU-III Secure Data

LEGEND:

CAS - Channel Associated Signaling
ETM - Enterprise Telephony Management
ISDN - Integrated Services Digital Network
Kbps - Kilobits Per Second
MLPP - Multilevel Precedence and Preemption
POTS - Plain Old Telephone Service
PRI - Primary Rate Interface
STE - Secure Terminal Equipment
STU - Secure Telephone Unit

JITC, Memo, Networks, Transmission and Intelligence Division (JTE), Joint Interoperability Test Certification of the SecureLogix Enterprise Telephony Management (ETM), TeleWall Telecommunications Firewall Application, Software Release 3.0.1 Lincoln 47

Table 2. SecureLogix ETM TeleWall Application Interface Interoperability Status

Interface Requirement	Critical	Status	Remarks
ETM 2100/3200			
T1 CAS	Yes	Certified	All Exchange Requirements of Table 1 met
ISDN PRI T1	Yes	Certified	All Exchange Requirements of Table 1 met
ETM 1010			
2 Wire Analog	Yes	Certified	All Exchange Requirements of Table 1 met

LEGEND:

CAS - Channel Associated Signaling
ETM - Enterprise Telephony Management
ISDN - Integrated Services Digital Network
PRI - Primary Rate Interface

6. JITC disseminates certification testing information to the Department of Defense (DOD) community via the Joint Interoperability Tool (JIT), which resides on the SIPRNET at http://199.208.204.125/ or at http://198.17.54.202/ (mirror site), and on the NIPRNET at http://jit.fhu.disa.mil/. A copy of this certification memorandum and enclosures will be available on the JIT. Instructions for obtaining access to JIT information are contained on the above homepages.

7. The JITC point of contact is Captain Gordon Bradley, DSN 821-8575 or commercial (520) 533-8575. The e-mail address is bradleyg@fhu.disa.mil.

FOR THE COMMANDER:

2 Enclosures:
1 Additional References
2 Certification Testing Summary

LESLIE F. CLAUDIO
Chief
Networks, Transmission and Intelligence Division

JITC, Memo, Networks, Transmission and Intelligence Division (JTE), Joint Interoperability Test Certification of the SecureLogix Enterprise Telephony Management (ETM), TeleWall Telecommunications Firewall Application, Software Release 3.0.1 Lincoln 47

Distribution:
Joint Staff J6I, Joint Chief of Staff, Room-1E833, Pentagon, Washington, DC 20318-6000
Joint Interoperability Test Command, Indian Head Division, NSWC, ATTN: JTCA-IPTP, Building 900, 101 Strauss Avenue, Indian Head, MD 20640-5035
Defense Information Systems Agency, Joint Interoperability Engineering Organization, ATTN: Code JECO, 5600 Columbia Pike, Suite 240, Falls Church, VA 22041
Chief Naval Operations/N6, Department of the Navy/N62/CTCS, 2000 Navy Pentagon, Washington, DC 20350
Deputy Chief of Staff for Communications and Information, AF/SCT, 1250 Air Force Pentagon, Washington, DC 20330-1250
Department of the Army, Office of the Secretary of the Army, Office Symbol SAIS-IAA, 107 Army Pentagon DISC4, Washington, DC 20310
United States Marine Corps, MARCORSYSCMD, C4I Directorate, Suite 315, 2033 Barnett, Quantico, VA 22134-5010
Defense Intelligence Agency/DS-MB1, Building 6000, Bolling AFB, Washington, DC 20340-3342
Office of Secretary of Defense, Director of Operational Test and Evaluation, Room-3D1067, 1700 Defense Pentagon, Washington, DC 20301-1700
Office of Secretary of Defense, Director of Operational Test and Evaluation, Room-3A1073, 1700 Defense Pentagon, Washington, DC 20301-1700
Office of Assistant Secretary of Defense, C3I/I3 Directorate, Crystal Mall 3, 7th Floor, 1931 Jefferson Davis Highway, Arlington, VA 22202
Deputy Director for I/O Testing, Office of Under Secretary of Defense, AT&L Interoperability, Room 3C261, Pentagon, Washington, DC 20301
United States Joint Forces Command, J6I, C4 Plans and Policy, 1562 Mitscher Ave, Norfolk, VA 23551-2488
United States Coast Guard, COMDT/G-SCE (C4), 2100 2nd Street SW, Washington, DC 20593
JS-J38, JCS, Pentagon, Washington, DC 20318
Commander, Defense Information Systems Agency (DISA), ATTN: NS53, 11440 Isaac Newton Square Reston VA 20190-5006

ADDITIONAL REFERENCES

(c) Defense Information Systems Agency (DISA), Joint Interoperability and Engineering Organization (JIEO), Technical Report 8249, "Defense Information System Network (DISN) Circuit Switched Subsystem, Defense Switched Network (DSN) Generic Switching Center Requirements (GSCR)," March 1997

(d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP)," 17 June 1999

CERTIFICATION TESTING SUMMARY

1. SYSTEM TITLE. SecureLogix Enterprise Telephony Management (ETM), TeleWall Telecommunications Firewall Application, Software Release 3.0.1 Lincoln 47.

2. PROPONENT. Defense Information Systems Agency (DISA) / SecureLogix Corporation.

3. PROGRAM MANAGERS. Howard Osman, NS53, 11140 Isaac Newton Square, Reston, Virginia, 22090-5087, DSN 653-8075, e-mail: osmanh@ncr.disa.mil. Lisa Ahlers, Senior Account Executive, SecureLogix Corporation, 13750 San Pedro, Suite 230, San Antonio, Texas, 78232, (719) 573-8471, e-mail: lisa.ahlers@securelogix.com.

4. TESTERS. Joint Interoperability Test Command (JITC), Ft. Huachuca, Arizona.

5. SYSTEM UNDER TEST DESCRIPTION. The ETM TeleWall Application takes the firewall concept for data communications and applies it to the telecommunications network. Like the data network version of a firewall, the ETM TeleWall Application provides a rule-based policy enforcement mechanism for telecommunications networks. The ETM TeleWall Application is designed to automatically monitor and enforce telecommunications policies in order to deter and detect access controls violations. It automatically detects, logs, alerts, and blocks phone line traffic that violates a user-defined rule.

6. OPERATIONAL ARCHITECTURE. The ETM TeleWall Application was tested in a configuration that accurately emulated how it will be deployed in the operational Defense Switched Network (DSN) environment. The DSN operational architecture is defined in Defense Information Systems Agency (DISA), Joint Interoperability and Engineering Organization (JIEO), Technical Report 8249, "Defense Information System Network (DISN) Circuit Switched Subsystem, Defense Switched Network (DSN) Generic Switching Center Requirements (GSCR)," March 1997.

7. REQUIRED SYSTEM INTERFACES. Table 1 details the interfaces and Exchange Requirements (ERs) required for interoperability certification of the ETM TeleWall Application. Interoperability certification of the interfaces is based on meeting criteria from the ERs.

8. TEST NETWORK DESCRIPTION. The test network is depicted in Figure 1. The digital switching systems used to test the ETM TeleWall Application were Nortel Networks' MSL-100, Siemens' EWSD, and Avaya's Definity G3R. The following interfaces, as depicted in Figure 1, were tested: T1 CAS AMI/D4, T1 CAS B8ZS/ESF, ISDN PRI T1, and 2 Wire Analog.

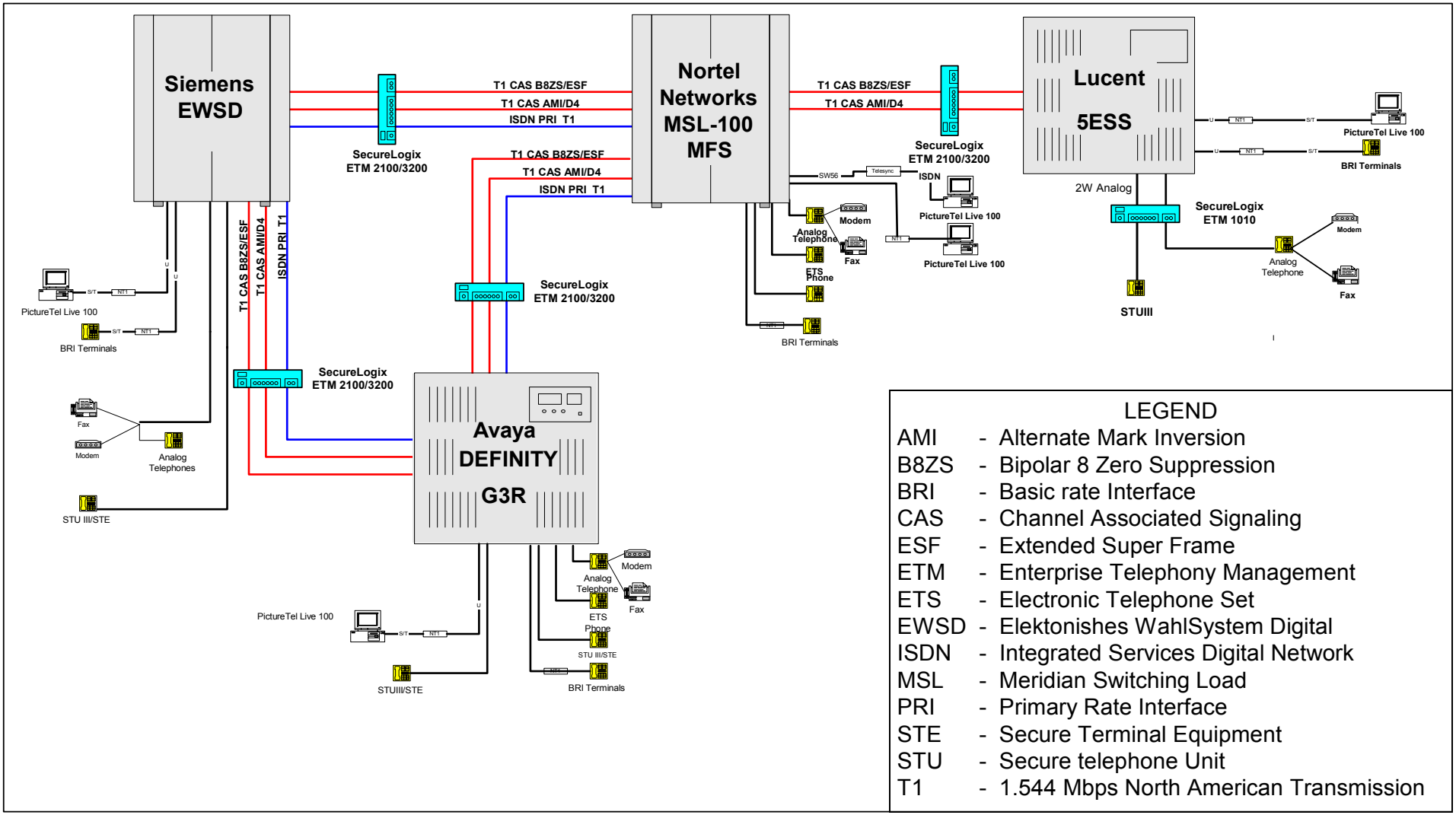

Figure 1. Test Network Configuration

Table 1. SecureLogix ETM TeleWall Application Exchange Requirements

Interface Requirement	Exchange Requirements	Exchange Method	Critical	References
SecureLogix ETM 2100/3200				
T1 CAS	Alarms MLPP Preempt Signals POTS Voice Calls Asynchronous Modem STU-III\STE Secure Voice STU-III\STE Secure Data Synchronous Data T1 Electrical Characteristics Video Teleconferencing	AMI (D4) B8ZS (ESF)	Yes	GSCR Mar 97 GSTP Jun 99
ISDN PRI T1	Alarms MLPP POTS Voice Calls Asynchronous Modem Secure Voice Secure Data Synchronous Data T1 Electrical Characteristics Video Teleconferencing	B8ZS (ESF)	Yes	GSCR Mar 97 GSTP Jun 99
SecureLogix ETM 1010				
2 Wire Analog	POTS Voice Calls Asynchronous Modem STU-III Secure Voice STU-III Secure Data	2 Wire POTS	Yes	GSCR Mar 97 GSTP Jun 99

LEGEND:

AMI - Alternate Mark Inversion
B8ZS - Bipolar Eight Zero Suppression
CAS - Channel Associated Signaling
D4 - Super Frame
ESF - Extended Super Frame
ETM - Enterprise Telephony Management
GSCR - Generic Switching Center Requirements
GSTP - Generic Switching Test Plan
ISDN - Integrated Services Digital Network
MLPP - Multilevel Precedence and Preemption
POTS - Plain Old Telephone Service
PRI - Primary Rate Interface

9. SYSTEM CONFIGURATIONS. Table 2 lists the hardware and software configurations associated with the systems used during the test.

Table 2. Tested System Configurations

System Name	Hardware	Software
SecureLogix ETM Firewall (TeleWall)	1010/2100/3200	Release 3.0.1 Lincoln 47
Nortel MSL-100	RISC Processor	Release MSL-15
Avaya Definity G3R	RISC Processor	Release G3V9.7585.5.0.1
Lucent 5ESS	RISC Processor	Release 5E15
Siemens EWSD	CP 113C	Release 18 w/ patch set 17++

10. TEST LIMITATIONS. None.

11. ASSESSMENT RESULTS

a. T1 CAS AMI/D4 and B8ZS/ESF Test Results

(1) Alarms. Red and yellow (Remote) Carrier Group Alarms (CGA) passed in accordance with the Defense Communications Agency Circular (DCAC) 370-175-13, Defense Switched Network (DSN) System Interface Criteria (SIC). All alarms propagated through the ETM TeleWall Application transparently.

(2) MLPP Preemption Signals. The four types of MLPP call scenarios listed below were tested over the T1 CAS AMI/D4 and B8ZS/ESF interfaces. Each preemption scenario met the MLPP preemption signal requirements in accordance with the GSCR paragraph 6.3.1. The ETM TeleWall Application transparently passed A/B signaling bit transitions and therefore, did not change or alter the MLPP preempt signals sent by the switch.

(a) Answered Call; Circuit to be Reused

(b) Unanswered Call; Circuit to be Reused

(c) Answered Call; Circuit not to be Reused

(d) Unanswered Call; Circuit not to be Reused

(3) Bypass Mode. The ETM TeleWall Application has the ability to automatically or manually enter a bypass mode. In this mode, the input and output connections of the T1 CAS AMI/D4 and B8ZS/ESF circuits are electronically connected bypassing the monitoring functionality of the ETM TeleWall Application. The power was disconnected from the ETM TeleWall Application during call loading of approximately 2100 calls per hour over both the T1 CAS AMI/D4 and B8ZS/ESF circuits. The call load scenario included a 56 Kbps Bit Error Rate Test (BERT) using a 2047 pattern for approximately 25 seconds per call. When the power was

disconnected, the ETM TeleWall Application automatically entered the bypass mode and there was no adverse impact on the call load results. Furthermore, there was no adverse effect on call load results when the power was reconnected to the ETM TeleWall Application. The ETM TeleWall Application appears transparent to the circuit during a power failure condition. The ETM TeleWall Application was also placed in the manual bypass mode during call loading via software producing the same results as recorded during the automatic mode.

(4) POTS Voice Calls. Manual calls were placed over the T1 CAS AMI/D4 and B8ZS/ESF circuits. All calls received a subjective voice call quality mean opinion score (MOS) of 4 or better on the International Voice Quality scale. The ETM TeleWall Application had no adverse effect on POTS voice calls and appeared transparent to the circuit under test.

(5) Asynchronous Modem Calls. All asynchronous modem calls were placed over the T1 CAS AMI/D4 and B8ZS/ESF circuits with a 100 percent success rate. The ETM TeleWall Application had no adverse effect on Asynchronous modem calls and appeared transparent to the circuit under test.

(6) STU-III/STE Secure Voice Calls. The following secure voice call scenarios were conducted with a 100 percent success rate. The ETM TeleWall Application had no adverse effect on STU-III/STE secure voice calls and appeared transparent to the circuit under test.

(a) STU-III to STU-III calls @ 9.6 Kbps

(b) STE to STE calls @ 32 Kbps

(c) STU-III to STE calls @ 4.8 Kbps

(7) STU-III/STE Secure Data Calls. The Sunset T10 test set was used to conduct an Asynchronous BERT using a 511 test pattern in the secure data mode for a period of 30 minutes per call. The ETM TeleWall Application had no adverse effect on STU-III/STE secure data calls and appeared transparent to the circuit under test. The following secure data call scenarios were conducted with a 100 percent success rate.

(a) STU-III to STU-III calls @ 9.6 Kbps

(b) STE to STE calls @ 19.2 Kbps

(c) STU-III to STE calls @ 9.6 Kbps

(8) Synchronous 56 Kbps Data Calls. The Sunset T10 and ADTRAN ISU 2x64-S test sets were used to conduct switched 56 Kbps synchronous BERT calls using a 2047 test pattern. Calls completed with a 100 percent success rate.

Furthermore, switched 56 Kbps calls were also placed over the T1 CAS AMI/D4 and B8ZS/ESF circuits using the Ameritec AM2D call loaders. 141,668 Switched 56 Kbps data calls using a 2047 pattern for a period of 25 seconds per call were placed over a three-day period producing a 99.99 percent success rate. A successful call requires a completed BERT with no bit errors per call. The ETM TeleWall Application had no adverse effect on switched 56 Kbps data calls and appeared transparent to the circuit under test.

(9) T1 Electrical Interface Characteristics. A pulse mask analysis was conducted on both the T1 CAS AMI/D4 and B8ZS/ESF interfaces to verify the ETM TeleWall Application met the required T1 electrical interface characteristics. The Pulse Mask analysis passed in accordance with the GSCR paragraph 7.1. The ETM TeleWall Application had no adverse effect on T1 electrical interface characteristics and appeared transparent to the circuit under test.

b. ISDN PRI T1 Test Results. The same test scenarios conducted over T1 CAS above were also conducted over the ISDN PRI T1 interface with the exception that both 56 Kbps and 64Kbps circuit switched data calls were placed, with the same results. The ETM TeleWall Application had no adverse effect on ISDN PRI T1 interface and appeared transparent to the circuit under test

c. 2 Wire Analog Test Results

(1) Bypass Mode. As with the T1 CAS and ISDN PRI T1 interfaces, the ETM TeleWall Application also has the ability to automatically or manually bypass the analog interface creating a physical connection. The power was disconnected from the ETM TeleWall Application when the following call types were established:

(a) POTS voice calls

(b) Asynchronous modem calls

(c) STU-III secure voice calls

(d) STU-III secure data calls

The ETM TeleWall Application automatically entered the bypass mode and there was no adverse impact on any of the established calls. The ETM TeleWall Application was also placed in the manual bypass mode during call loading via software producing the same results as recorded during the automatic mode.

12. SUMMARY. The SecureLogix ETM TeleWall Application, Software Release 3.0.1 Lincoln 47, is certified for use in the DSN, in accordance with the requirements set forth in reference (c). When connected to the interfaces certified in this letter, the ETM TeleWall Application was transparent to the switching systems or lines interfaced causing no degradation of service or negative impact.

Table 4. SecureLogix ETM TeleWall Application Interoperability Requirements/Status

Interface	ER/Criteria	Critical Interface	Test Result	Operational Impact	Interface Status
T1 CAS	Alarms must be propagated in accordance with GSCR Para. 10.2	Yes	Passed	None	Certified
	MLPP Preempt Signals must be propagated in accordance with GSCR Para. 6.3.1		Passed	None	
	POTS Voice Calls must pass in accordance with GSCR Para. 10.1		Passed	None	
	Asynchronous Modem must pass in accordance with GSCR Para. 10.2		Passed	None	
	Secure Voice calls must pass in accordance with GSCR Para. 10.2		Passed	None	
	Secure Data calls must pass in accordance with GSCR Para. 10.1		Passed	None	
	Synchronous Data calls must pass in accordance with GSCR Para. 10.2		Passed	None	
	T1 Electrical Interface Characteristics in accordance with GSCR Para. 7.1		Passed	None	
	Video Teleconferencing in accordance with GSCR Para. 10.2		Passed	None	

Table 4. SecureLogix ETM TeleWall Application Interoperability Requirements/Status (continued)

Interface	ER/Criteria	Critical Interface	Test Result	Operational Impact	Interface Status
ISDN PRI T1	Alarms must be propagated in accordance with GSCR Para. 10.2	Yes	Passed	None	Certified
	MLPP Preempt Signals must be propagated in accordance with GSCR Para. 6.3.1		Passed	None	
	POTS Voice Calls must pass in accordance with GSCR Para. 10.1		Passed	None	
	Asynchronous Modem must pass in accordance with GSCR Para. 10.2		Passed	None	
	Secure Voice calls must pass in accordance with GSCR Para. 10.2		Passed	None	
	Secure Data calls must pass in accordance with GSCR Para. 10.1		Passed	None	
	Synchronous Data calls must pass in accordance with GSCR Para. 10.2		Passed	None	
	T1 Electrical Interface Characteristics in accordance with the GSCR Para. 7.1		Passed	None	
	Video Teleconferencing in accordance with GSCR Para. 10.2		Passed	None	

Table 4. SecureLogix ETM TeleWall Application Interoperability Requirements/Status (continued)

Interface	ER/Criteria	Critical Interface	Test Result	Operational Impact	Interface Status
2 Wire Analog	POTS Voice Calls must pass in accordance with GSCR Para. 10.1	Yes	Passed	None	Certified
	Asynchronous Modem must pass in accordance with GSCR Para. 10.2		Passed	None	
	Secure Voice calls must pass in accordance with GSCR Para. 10.2		Passed	None	
	Secure Data calls must pass in accordance with GSCR Para. 10.1		Passed	None	

LEGEND:

ER - Exchange Requirements
GSCR - Generic Switching Center Requirements
ISDN - Integrated Services Digital Network
MLPP - Multilevel Precedence and Preemption
POTS - Plain Old Telephone Service
PRI - Primary Rate Interface